

REMARKS

Claims 1-15 are currently pending in the application. Claim 1 has been amended to remove a semicolon. Removal of the semicolon makes the claim language clearly state that more than one status manager is provided and that each task unit includes one status manager. Support for this amendment is provided at page 3 of the Specification and also at Figure 3 of the drawings. Thus no new matter is added. This amendment also does not raise any new issues that need further search and/or consideration. This amendment is made for grammatical and clarity revisions, and appears to have already been considered by the Examiner at page 12 of the Office Action. This amendment places the application in condition for allowance and/or in better form for appeal. Accordingly, this amendment should be entered into the record. Reconsideration and withdrawal of all pending rejections in view of the above amendment and following remarks is respectfully requested.

Allowable Subject Matter

Applicants appreciate the indication that claim 6 recites allowable subject matter, but respectfully decline to amend claim 6 to include the limitations of its base claims 1-3 and 5, as suggested. Instead, Applicants amend claim 1, as indicated above, and submit that such amendment places the claims in condition for allowance.

35 U.S.C. § 102 Rejection

Claims 1 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by U. S. Patent No. 6,434,590 issued to Blleloch, *et al.* ("Blleloch"). This rejection is moot in view of the amendment made to claim 1.

Claim 1 is amended to remove a semi-colon to make clear that each task unit includes both a processor and a status manager. Claim 1 now recites, in pertinent part:

each of said task units including a processor for executing the steps of the associated task in response to a received request action and a status manager for handling actions from source task units and building actions to be sent to destination task units.

As admitted by the Examiner, the claimed inclusion of a status manager in each task unit is not disclosed or suggested by Blleloch. Instead, Blleloch discloses ONE assignment manager that supplies and makes available a set of tasks to a plurality of processing units. The single

assignment manager taught by Blleloch is external to each of the processing units and is shared by all of them. Thus, in contrast to the claimed invention, Blleloch's processing units do not include status managers as claimed. *See* Blleloch, Figures 2, 2a, and 3, and accompanying descriptions.

Another important difference between the claimed invention and Blleloch is that Blleloch discloses a task scheduler where tasks do not have strong links between them. No data from one task can be used as an input for another task. Rather, Blleloch's assignment manager is used to assign available resources to tasks that are queued in a waiting list. In the claimed invention, "child" destination tasks are linked to "parent" source tasks¹. This is claimed in claim 1, which recites:

a task interconnection logic means interconnecting the task units for communicating actions from a source task unit to a destination task unit; ...

a status manager for handling actions coming from source task units and building actions to be sent to destination task units.

Another distinction is that in Blleloch, a task may generate another task. This task generation is not a predefined action, but the consequence of the processed task. In the claimed invention, a task cannot generate a new task. There are only two predefined "child" tasks (left or right) for a given binary decision. Each task ends by the selection of one of the two "child" tasks. Unlike Blleloch, in the claimed invention, there is no task action within a task except the last task in a given process which gives a pointer to an action task. Thus, the function of the tasks is to select one of the next "child" tasks. This is commensurate with the purpose of the invention, which is to speed up a tree-oriented analysis (or search).

For these reasons, Applicants respectfully submit that claim 1 is allowable over Blleloch. Claim 11 is also allowable over Blleloch by virtue of its dependency from allowable base claim 1. Withdrawal of the rejection of claims 1 and 11 is respectfully requested.

¹ The terms "child" and "parent" do not appear in the claims, and are used herein for ease of explanation only.

35 U.S.C. § 103 Rejection

Claims 2-3 and 12-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blelloch. This rejection is respectfully traversed with respect to claims 12-15, and has been rendered moot with respect to claims 2-3 by the amendment made to claim 1. Accordingly, claims 2-3 are allowable based on their dependencies from allowable base claim 1, the novel features of which were described above.

Claims 12-15

With respect to claim 12, the Examiner admits that Blelloch does not teach “at least two status managers each being associated with each of the two task units, respectively”, as recited by claim 12. However, it is argued that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to eliminate the need of having more than one status managers and lower the cost of the device since the one status manager taught in Blelloch’s device is able to perform the same desired needs of having multiple status managers.

Respectfully, this argument makes sense only in hindsight, which is impermissible. For example, it has been admitted and established that Blelloch discloses only ONE assignment manager which makes a set of tasks available to a plurality of processing units, and that, in a contrary manner, embodiments of the claimed invention have a plurality of task managers that are included in a corresponding plurality of task units. If these facts are true, then the claimed invention, contrary to the Examiner’s assertions, does not “eliminate the need of having more than one status managers and lower the cost of the device.”

Moreover, Applicants respectfully disagree that the “one status manager in Blelloch’s device is able to perform the same desired needs of having multiple status managers.” In fact, Blelloch’s one status manager operates differently than the multiple status managers of the claimed invention. Blelloch’s one status manager supplies a set of available tasks and makes them available to a plurality of processing elements, any of which is capable of handling the available tasks. In contrast, each of the multiple status managers of the claimed invention handles actions from source task units and builds actions to be sent to particular destination task units. Thus, as mentioned above, each of the invention’s multiple status managers selects one of two

“child” destination units. Thus, it is respectfully submitted that the multiple status managers of the claimed invention operate differently than the one status manager disclosed by Blelloch.

Additionally, Applicants respectfully traverse the Examiner’s statements at page 13 of the Office Action dated October 15, 2004 that:

it is noted that the features on which Applicant relies (i.e., being able to process multiple tasks simultaneously without a single processor receiving all the tasks) are not recited in the rejected claim(s).

Although the language of claim 12 does not explicitly state verbatim “being able to process multiple tasks simultaneously without a single processor receiving all the tasks”, this feature is inherent from the recitation of claim 12:

at least two task units each configured to process the steps of a respective single task of a multiple task algorithm;

at least two processors configured to execute the respective single task in each of the respective at least two task units.

From this claim language, it is clear that each task unit includes a single processor. It is further clear that each task unit receives a single task. It thus follows that the single task assigned to each task unit is executed by the processor included in each task unit. If two processors, in two task units, are executing two different tasks, then the claimed invention is “able to process multiple tasks simultaneously without a single processor receiving all the tasks.”

Applicants further note that claim 12 further recites:

at least two status managers each being associated with each of the at least two task units respectively, the at least two status managers configured to receive from the interconnection logic means the actions and directing execution of the respective single task.

From this claim language, it is clear that each task unit includes a status manager. It is further clear that each status manager receives the respective single task assigned to its respective task unit. If two task managers in two task units, are receiving two different tasks, then the claimed invention is able to process multiple tasks simultaneously without a single status manager receiving all the tasks. This feature is contrary the teachings of the cited prior art reference. Consequently, claim 12 is allowable over Blelloch. Claims 13-15 are also allowable based on

their dependencies from allowable base claim 12. Withdrawal of the rejection of claims 2-3 and 12-15 is respectfully requested.

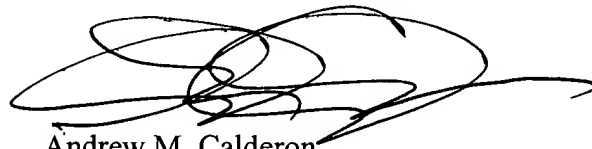
Claims 5 and 7-10

Claims 5 and 7-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Blelloch in view of U.S. Patent No. 5,430,850 to Papadopoulos and Official Notice. Claim 10 is rejected 35 U.S.C. § 103(a) as being unpatentable over Blelloch in view of Papadopoulos, in further view of U.S. Patent No. 5,321,842 to Fairfield. These rejections are moot in view of the amendment made to claim 1, from which claims 5 and 7-10 depend. Withdrawal of the rejection of claims 5 and 7-10 is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the rejections have been overcome, and that the claims are patentably distinct from the prior art of record and in condition for allowance. The Examiner is respectfully requested to pass the above application to issue, and to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **Deposit Account No. 09-0457** (Endicott).

Respectfully submitted,



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